

What is claimed is:

1. An electromotive machine comprising a stator element and a rotor element,  
wherein the stator element comprises at least one set of  $N$  toroidally shaped  
electromagnetic members, the electromagnetic members arranged along an arc a predetermined  
5 distance apart defining a stator arc length, each of the electromagnetic members having a slot,  
wherein the rotor element comprises a disc adapted to pass through the slots of the  
electromagnetic members, the disc containing a plurality of permanent magnet members spaced  
side by side about a periphery thereof and arranged so as to have alternating north-south  
polarities, the permanent magnet members being sized and spaced such that within the stator  
10 arc length the ratio of electromagnetic members to permanent magnet members is  $N$  to  $N+1$ ,  
and

wherein  $N$  equals a number of electrical excitation phases applied to the  
electromagnetic members, and

wherein when operating as a motor the electromotive machine is self-starting.

15